

IMWG Conference Series: ASH 2018



Best of ASH: What are the takeaways?
Monday, December 3, 2018
San Diego, CA

Tonight's Speakers



Brian GM Durie
Cedars Sinai Medical Center



Maria Victoria Mateos
University of Salamanca



Joseph Mikhael
Translational Genomics Research Institute (TGen)
City of Hope Cancer Center

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ASH 2018

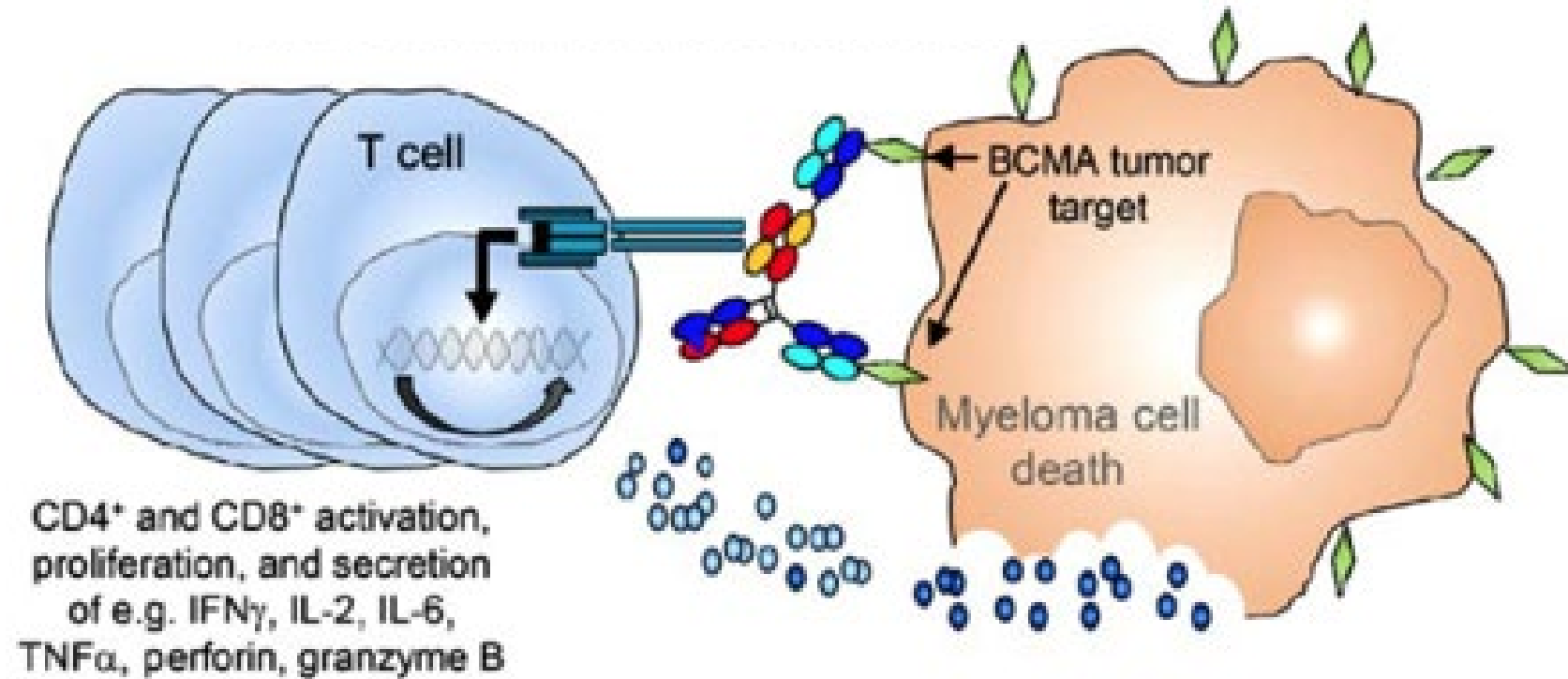
- **939 total myeloma abstracts!**
- **Massive number of orals and posters on CAR T and related immunotherapy**
- **Many important novel therapy updates**
- **Interesting abstracts on molecular and biology topics**

Tonight's Topics

- Bispecific T-cell Engagers (BiTEs)
- CAR T Cells
- Frontline Therapy
- Maintenance
- Blood Monitoring
- MRD in Relapse

... Any more “hot topics”?

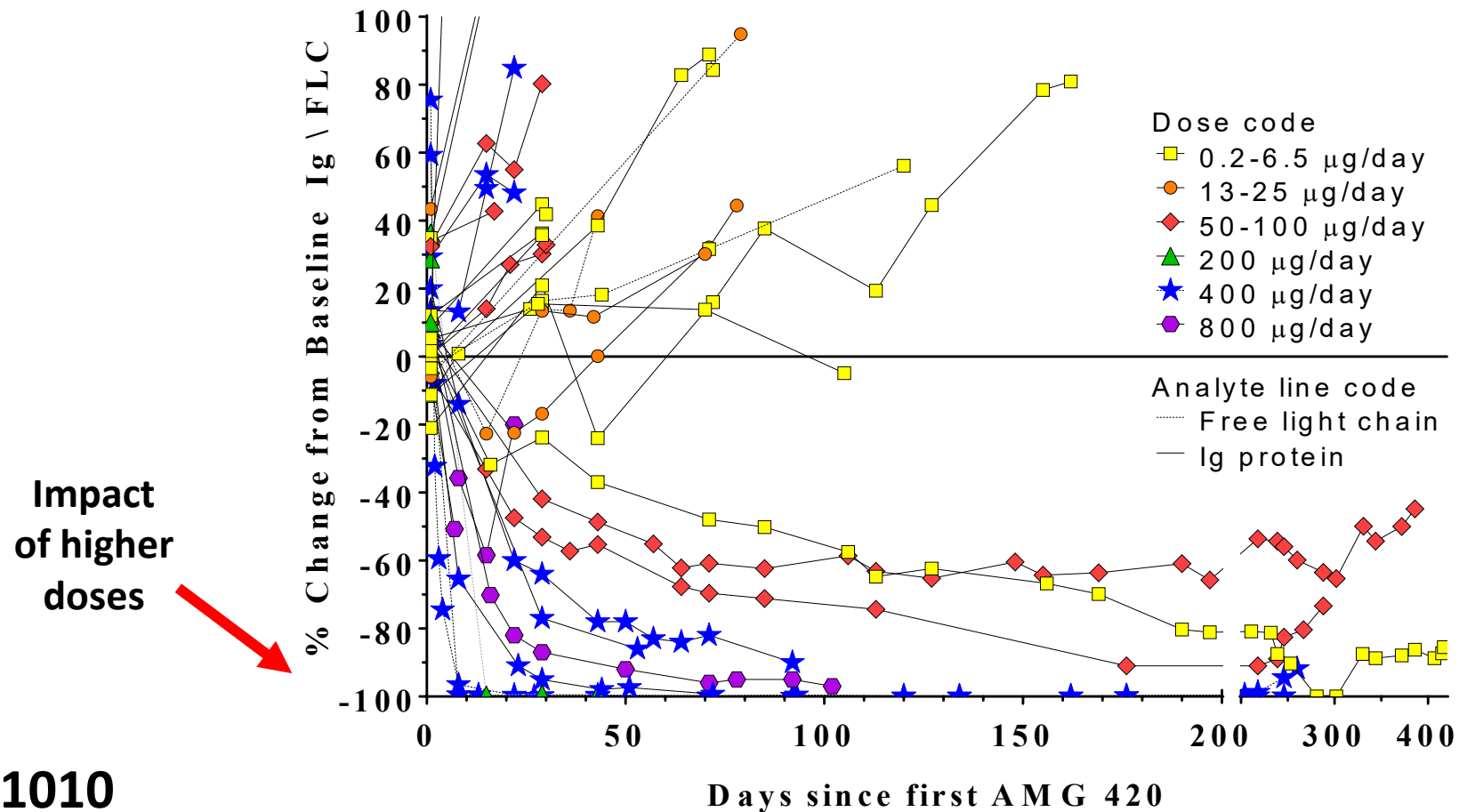
Impact of a Bispecific Antibody (BiTE)



Abstract #1010

Something New: BiTEs!

- First report on BCMA BiTE: Abstract #1010 AMG 420 BiTE: Phase 1 dose escalation



Abstract #1010: AMG 420 Anti-BCMA BiTE®

AMG 420, an Anti-BCMA BiTE®, Induces MRD-Negative CRs in Relapsed/Refractory MM Patients: Results of a Dose Escalation FIH Phase 1 Study

- Max S Topp,¹ Johannes Duell,¹ Gerhard Zugmaier,² Michel Attal,³ Philippe Moreau,⁴ Christian Langer,⁵ Jan Krönke,⁶ Thierry Facon,⁷ Hermann Einsele,^{1*} Gerd Munzert^{8*}

¹Department of Internal Medicine II, University Hospital Würzburg, Würzburg, Germany,

²Amgen Research (Munich), Munich, Germany, ³University of Toulouse, Toulouse, France,

⁴Hematology Department Chair, University Hospital Center of Nantes, Nantes, France,

⁵Kempton Clinic, Kempton, Germany, ⁶Ulm University, Ulm, Germany,

⁷Regional University Hospital of Lille, Lille, France, ⁸Boehringer Ingelheim, Ingelheim am Rhein, Germany

*Contributed equally

First Question

Is this encouraging?

**What is the future for BiTEs
versus CAR T therapies?**

More Detail on CAR T Therapies

- **So many abstracts!**
 - **Abstract #955: follow up Legend (China) trial results**
 - **Abstract #1011: a fully humanized CAR T therapy**
 - **Abstract #591: an allo CAR T therapy (“off the shelf”)**
 - **Abstract #1014: a multi-antigen approach**
 - **Abstract #589: novel GPRC5D target**
 - **... And many, many more, such as with an EGFR safety switch!!**

Abstract #955: Legend-2 Anti-BCMA CAR T

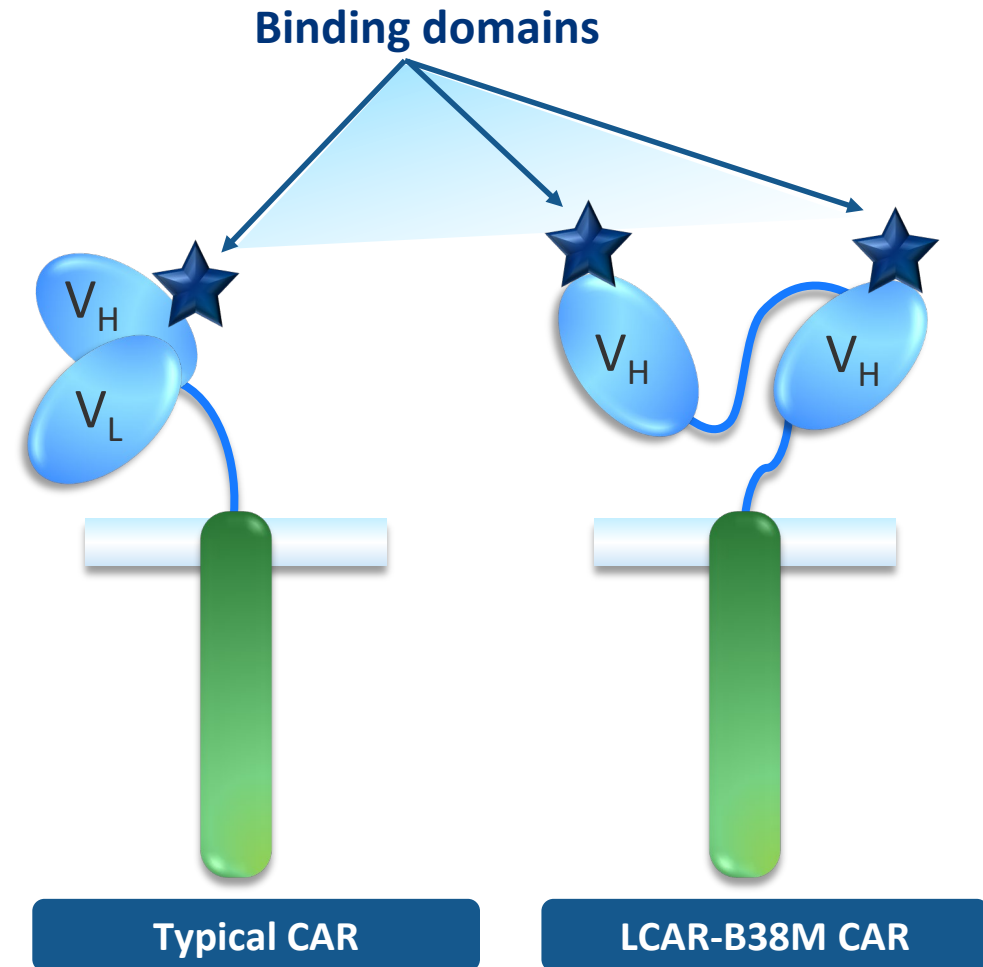
Updated Analysis of a Phase 1, Open-Label Study of LCAR-B38M, a Chimeric Antigen Receptor T Cell Therapy Directed Against B-Cell Maturation Antigen, in Patients with Relapsed/Refractory Multiple Myeloma

Wan-Hong Zhao,¹ Jie Liu,¹ Bai-Yan Wang,¹ Yin-Xia Chen,¹ Xing-Mei Cao,¹ Yun Yang,¹ Yi-Lin Zhang,¹ Fang-Xia Wang,¹ Peng-Yu Zhang,¹ Bo Lei,¹ Liu-Fang Gu,¹ Jian-Li Wang,¹ Nan Yang,¹ Ru Zhang,¹ Hui Zhang,¹ Ying Shen,¹ Ju Bai,¹ Yan Xu,¹ Xu-Geng Wang,¹ Rui-Li Zhang,¹ Li-Li Wei,¹ Zong-Fang Li,² Zhen-Zhen Li,² Yan Geng,³ Qian He,³ Qiu-Chuan Zhuang,⁴ Xiao-Hu Fan,⁴ Ai-Li He,^{1,2} Wang-Gang Zhang¹

¹Department of Hematology, The Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, ShaanXi, China; ²National-Local Joint Engineering Research Center of Biodiagnostics & Biotherapy, The Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, ShaanXi, China; ³Department of Clinical Laboratory, The Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, ShaanXi, China; ⁴Nanjing Legend Biotech Inc., Nanjing, Jiangsu, China

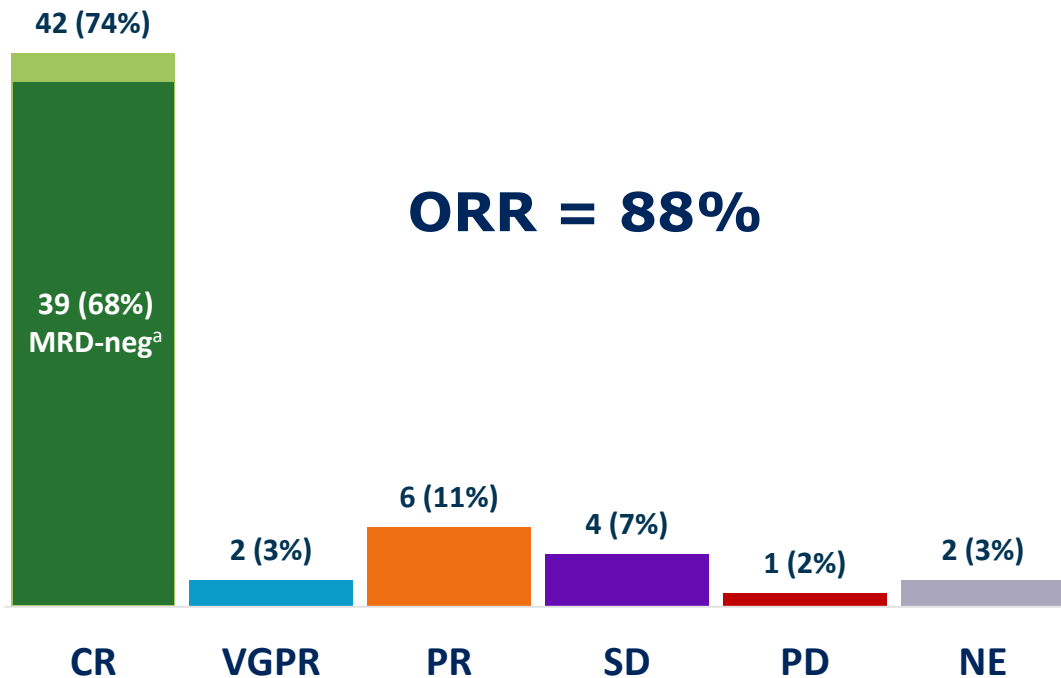
Legend-2 Trial Details

- ❑ **LCAR-B38M is a chimeric antigen receptor (CAR) T cell therapy with 2 BCMA targeting domains**
 - Confers high avidity binding and distinguishes LCAR-B38M from other BCMA-targeted CAR T cell therapies
- ❑ **LEGEND-2: Phase 1 investigator-initiated study in R/R multiple myeloma (MM) conducted at 4 sites in China**
 - Variable preconditioning regimens (Cy-Flu vs. Cy)
 - Variable CAR T infusion methods (split vs. single infusion)
- ❑ **LEGEND-2 results previously presented**
 - First 35 patients at the Xi'an site at ASCO and EHA 2017
 - First 11 patients at the 3 other sites at ASH 2017
- ❑ **57 patient experience at Xi'an site as of 25 June 2018 are presented here, with a 12-month (0.7–25.1) follow-up**



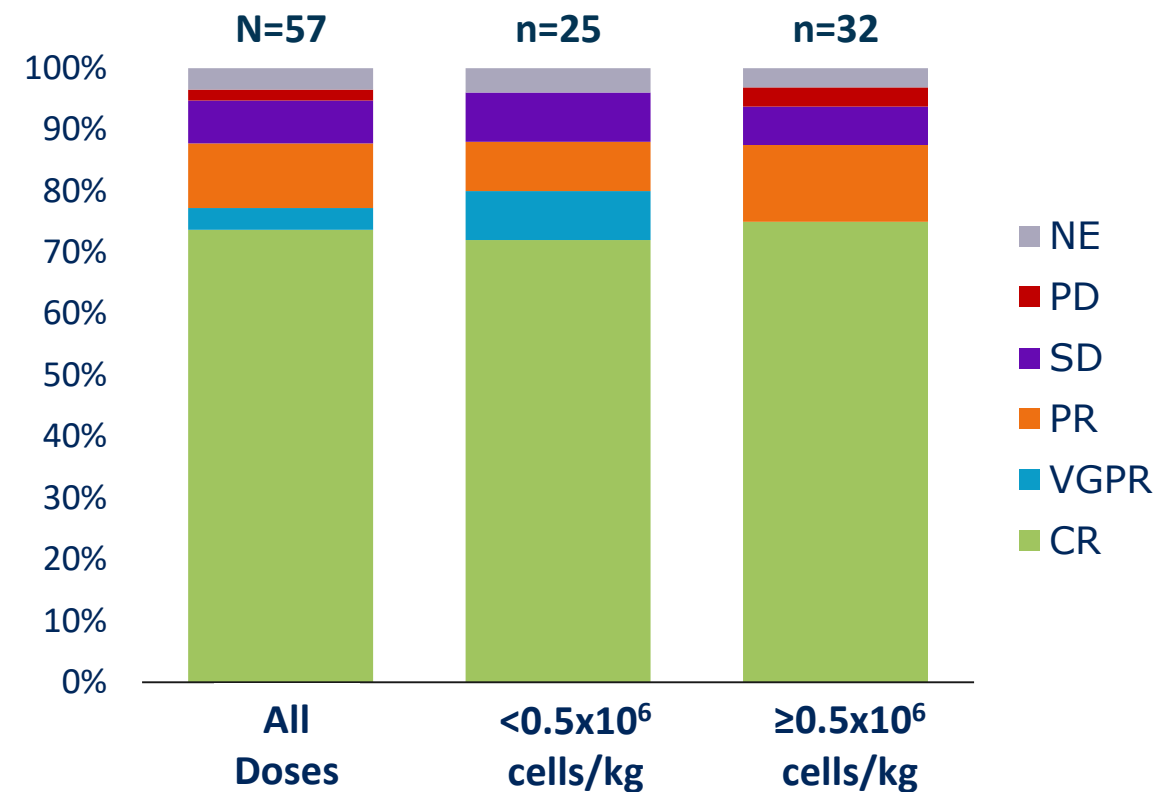
Best Responses

Best Overall Response (N=57)



- mDOR = 16 mo (95% CI, 12–NR)
- mDOR for MRD-neg CR = 22 mo (95% CI, 14–NR)
- Median time to initial response = 1 mo (0.4–3.6)

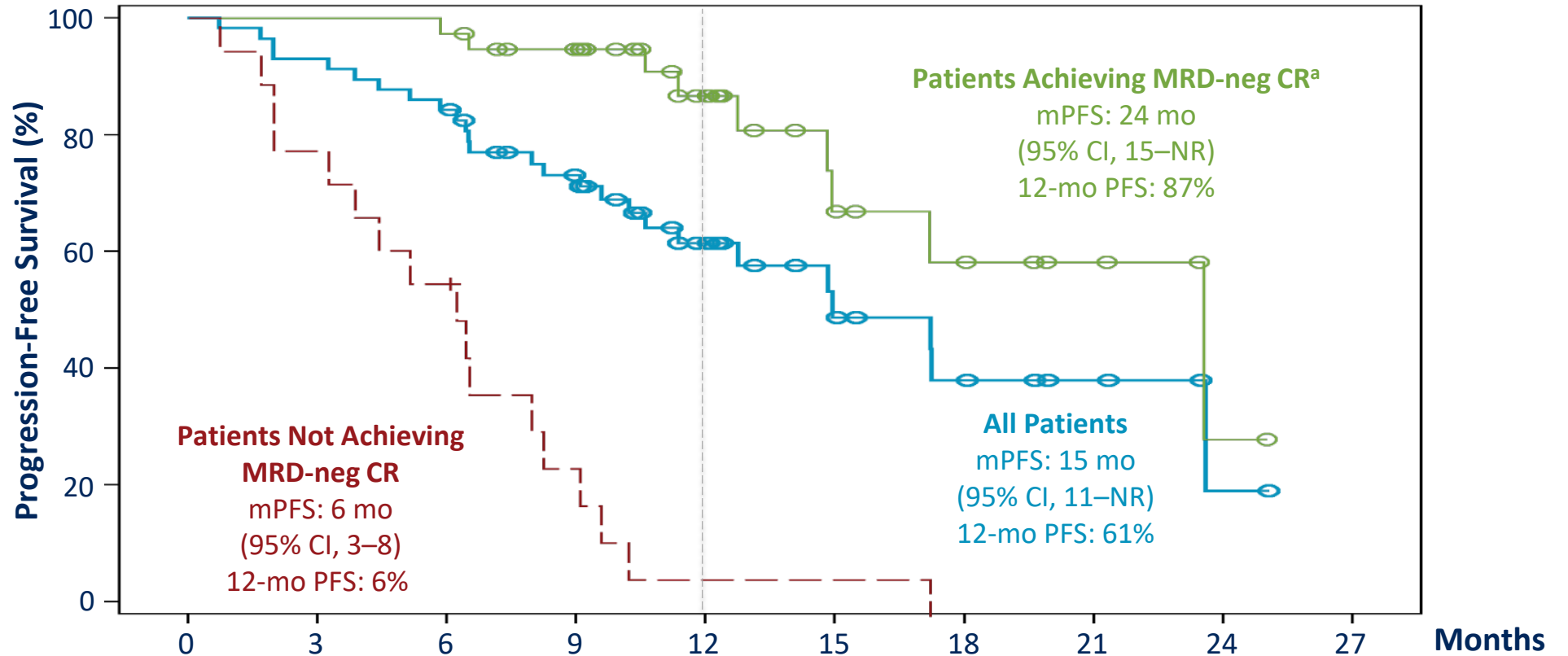
Best Overall Response by Dose



BCMA <40% (n=26/53)^b = 92% ORR
 BCMA ≥40% (n=27/53)^b = 82% ORR

^a8-color flow cytometry with cell count up to 500,000 cells; ^bBCMA expression data available for 53 patients

Progression Free Survival

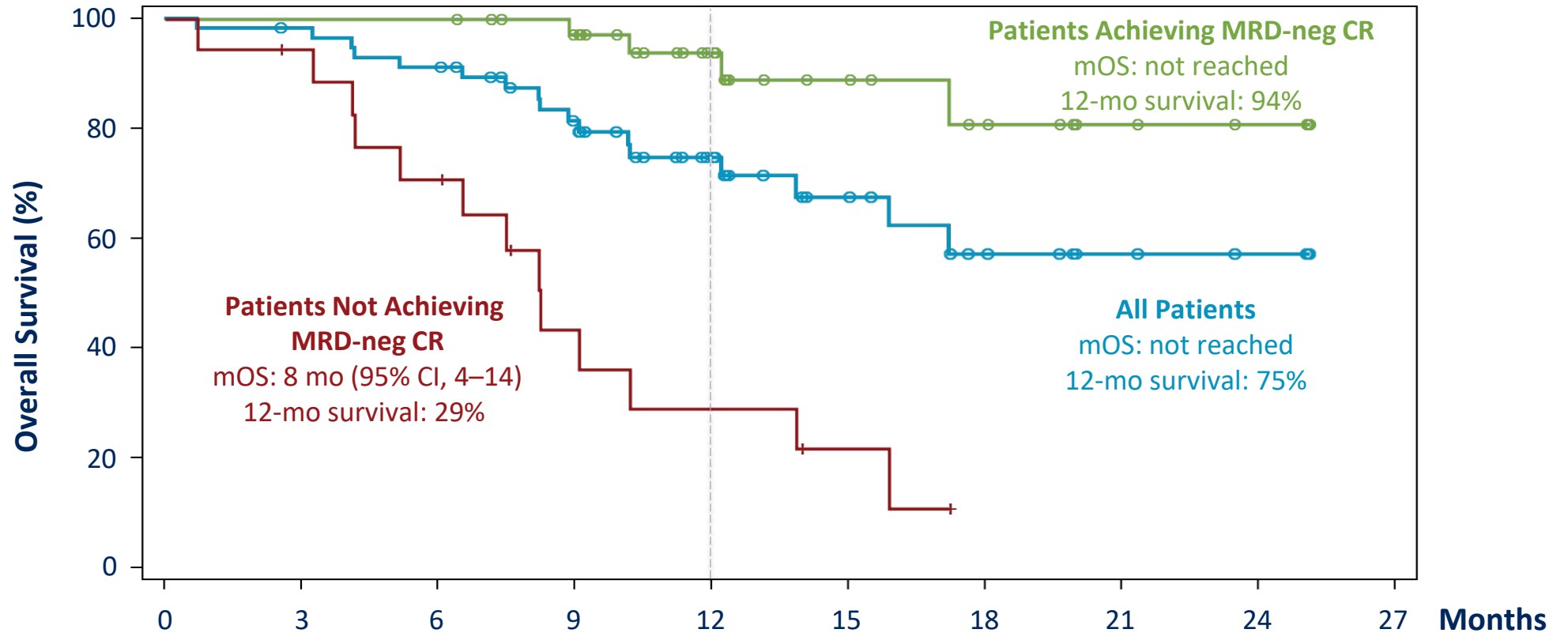


Patients at risk:

All Patients	57	53	48	37	21	11	7	4	1	0
Patients Achieving MRD-neg CR	39	39	38	33	20	10	7	4	1	0
Patients Not Achieving MRD-neg CR	18	14	10	4	1	1	0	0	0	0

^a30/39 patients still in remission

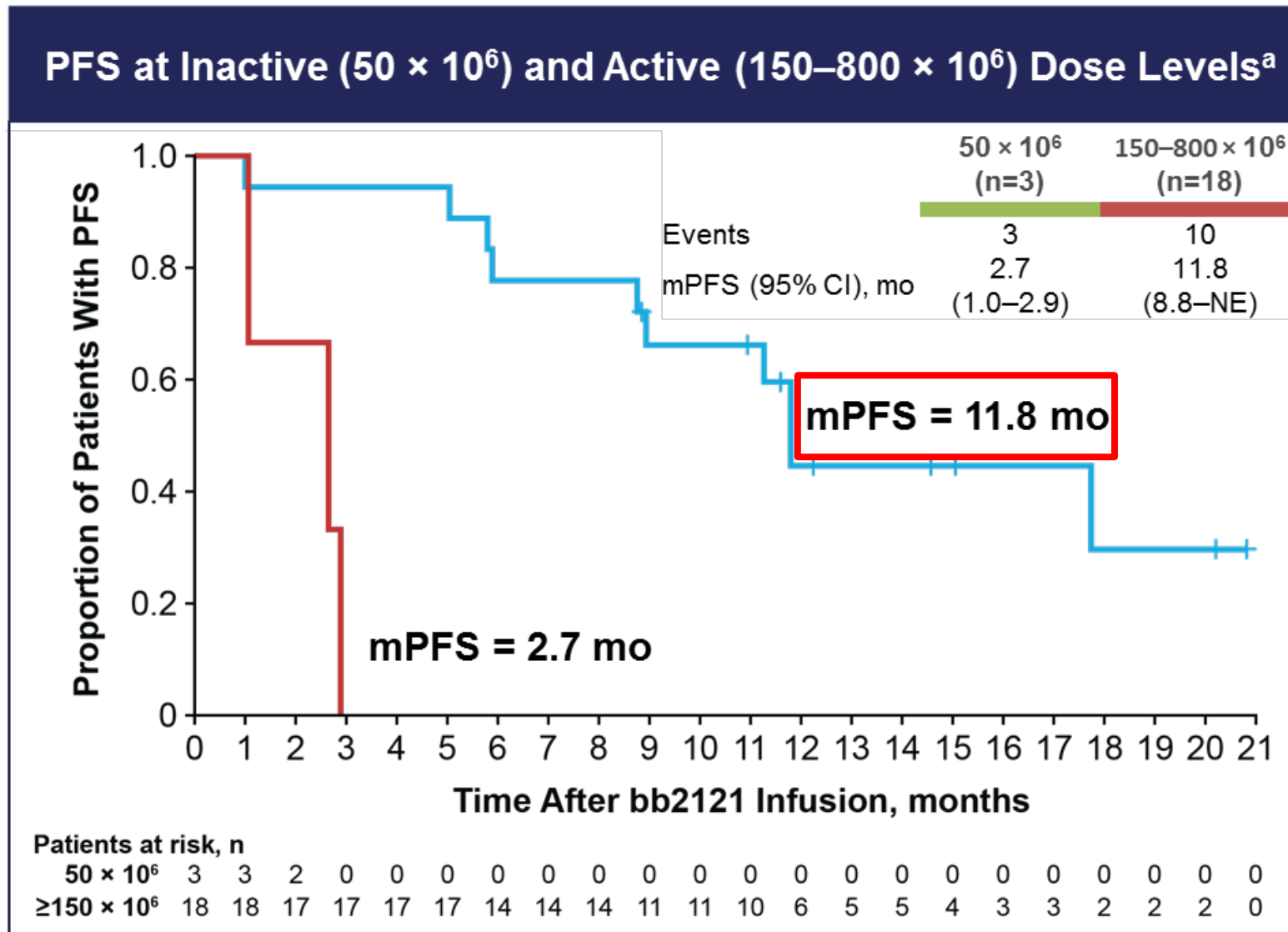
Overall Survival



Patients at risk:

All Patients:	57	55	51	40	25	15	9	5	3	0
Patients Achieving MRD-neg CR:	39	39	39	34	21	13	9	5	3	0
Patients Not Achieving MRD-neg CR:	18	16	12	6	4	2	0	0	0	0

PFS with BCMA (bb2121) CAR T: ASCO 2018



CAR T Therapies

Lead candidates

- **bb2121 ASCO 2018**
- **Legend ASH 2018**

+ multiple new alternatives

What do you foresee for:

- **Approval(s)?**
- **Future developments**

Frontline Therapies

- **SWOG 0777 Updates**
- **DRd versus Rd LBA-2**

... + impact of t(11;14) in frontline setting

Abstract #1992: SWOG 0777 Trial

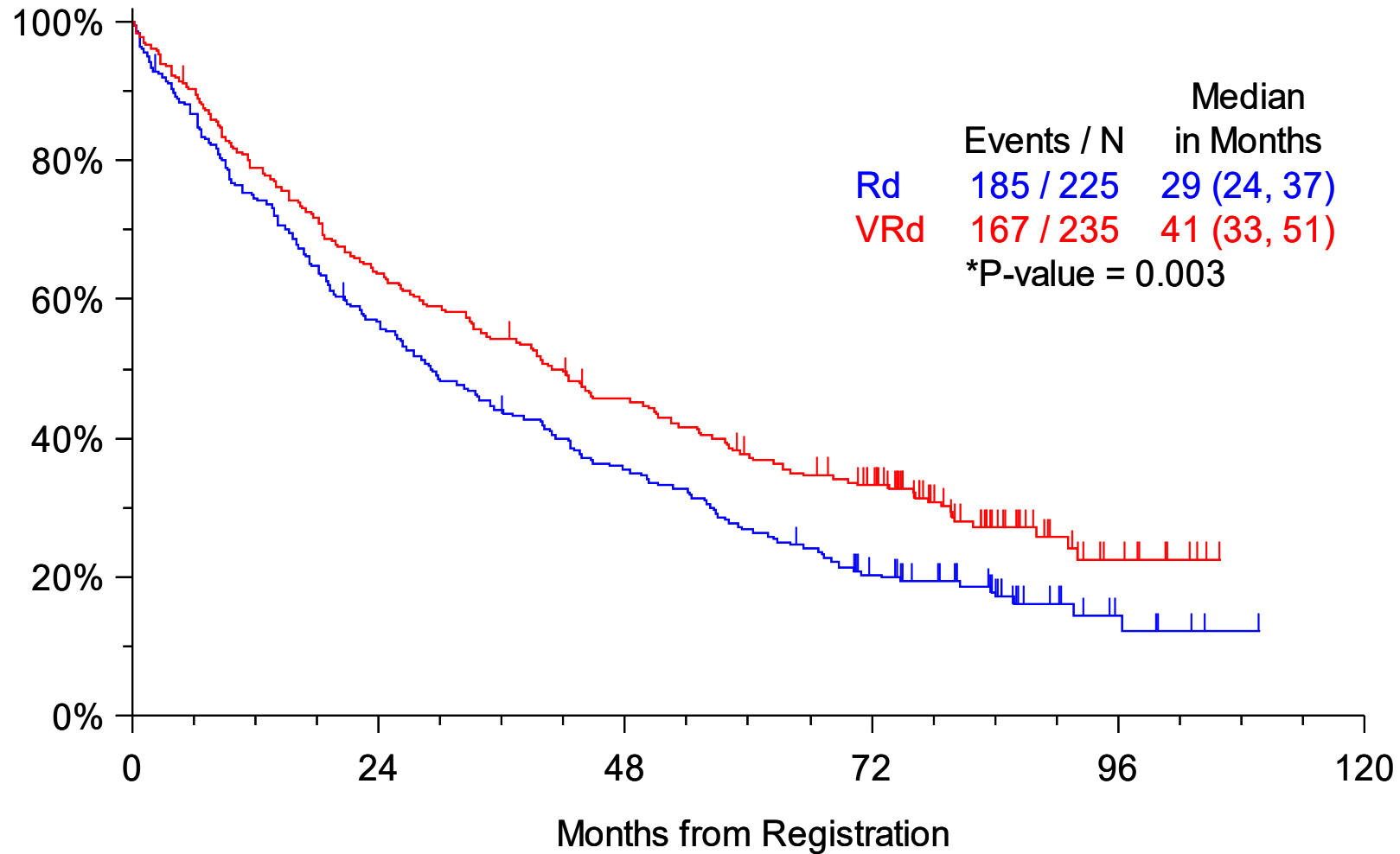
Updated Response Results*

	VRd (n=215)	Rd (n=207)
Complete response (CR)	24.2% (52)	12.1% (25)
Very good partial response (VGPR)	50.7% (109)	41.1% (85)
VGPR or better	74.9%	53.2%
Partial response (PR)	15.3% (33)	25.6% (53)
Overall Response Rate (ORR)	90.2% (194)	78.8% (163)
Stable disease (SD)	7.0% (15)	16.4% (34)
PD or death	2.8% (6)	4.8% (10)

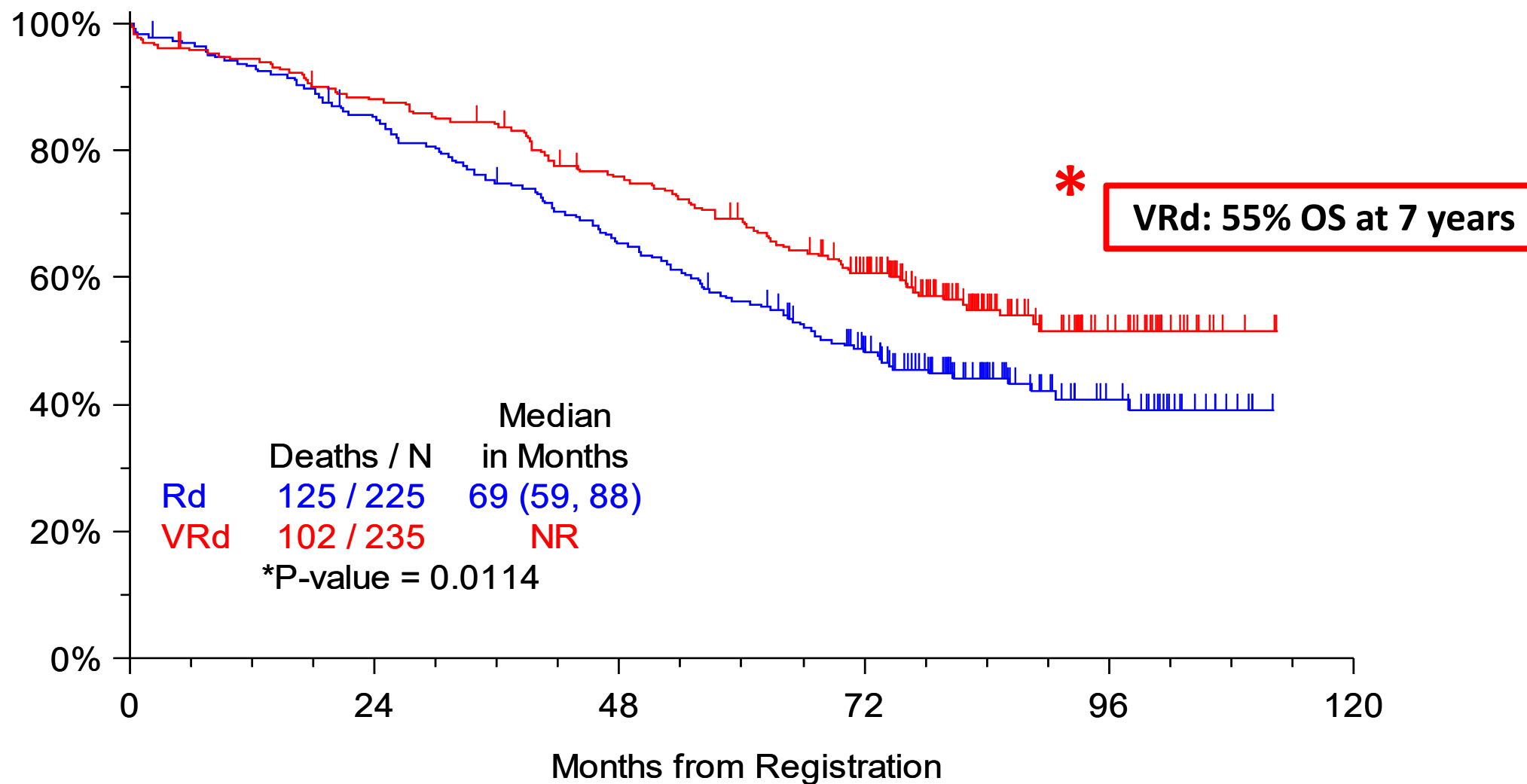
*Both SWOG and IRC stratified Cochran-Mantel-Haenszel analyses indicated improved responses with VRd (odds ratio = 0.528: P=0.006 [ITT] odds ratio= 0.38: P=0.001 [sensitivity analysis])

SWOG 0777: Progression-Free Survival

PFS



SWOG 0777: Overall Survival



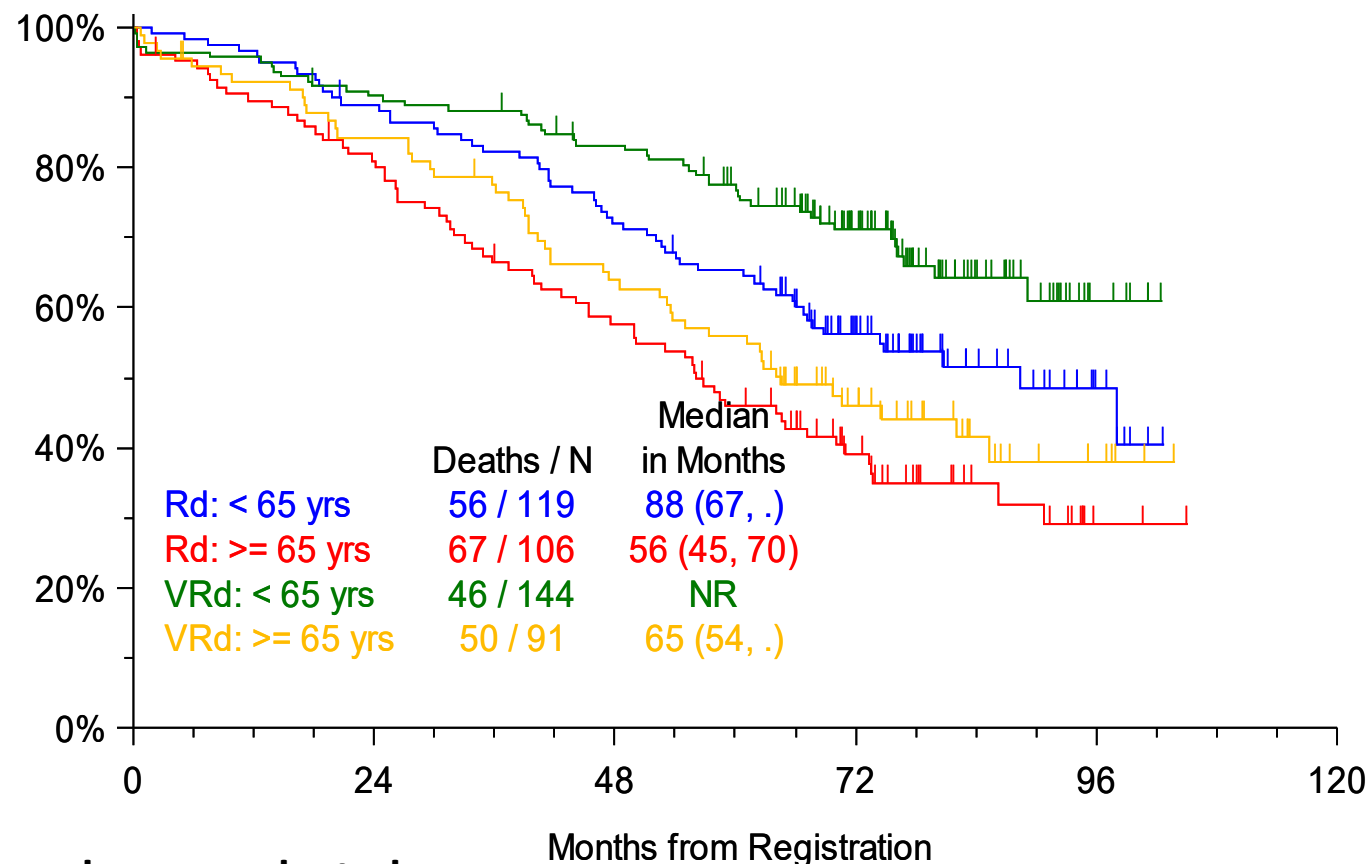
Impact of Age in SWOG 0777 Trial

Median PFS (months)

Age (years)	VRd	Rd
<65	48	34
≥65	34	24
>75	34	17

Using Forest plot technique other correlates of improved outcomes (PFS and OS) with VRd are $S\beta_2M$ (<4); BMPC (60%); hemoglobin (>10 GMS/dl); serum creatinine (<2 mg/dl) i.e. predominantly good risk (early disease) risk features

Overall Survival by Age



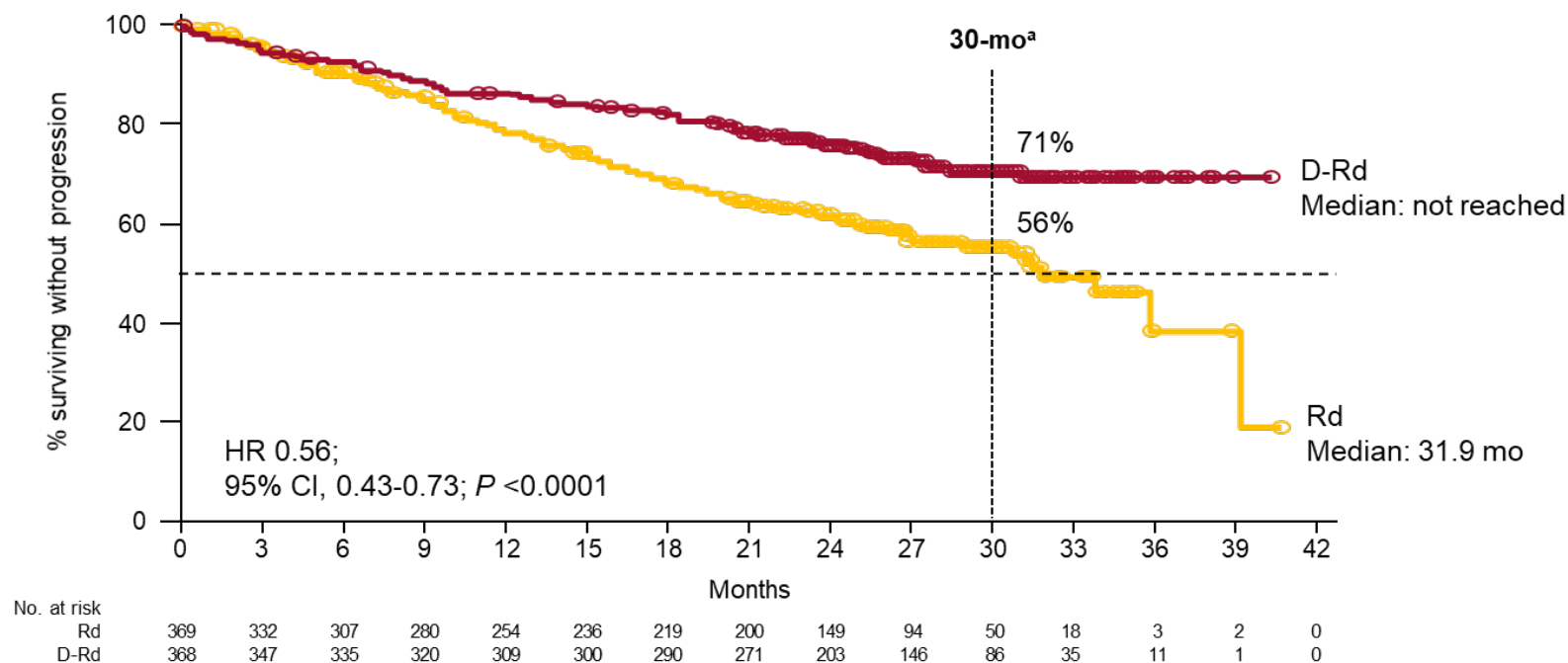
*For all analyses, both SWOG and IRC assessments have been conducted using the fully updated datasets with current datalock in May 2018

Phase 3 Randomized Study of Daratumumab Plus Lenalidomide and Dexamethasone (D-Rd) Versus Lenalidomide and Dexamethasone (Rd) in Patients With Newly Diagnosed Multiple Myeloma (NDMM) Ineligible for Transplant (MAIA)*

Thierry Facon,¹ Shaji Kumar,² Torben Plesner,³ Robert Z. Orlowski,⁴ Philippe Moreau,⁵ Nizar Bahlis,⁶ Supratik Basu,⁷ Hareth Nahi,⁸ Cyrille Hulin,⁹ Hang Quach,¹⁰ Hartmut Goldschmidt,¹¹ Michael O'Dwyer,¹² Aurore Perrot,¹³ Christopher P. Venner,¹⁴ Katja Weisel,¹⁵ Joseph R. Mace,¹⁶ Tahamtan Ahmadi,¹⁷ Christopher Chiu,¹⁸ Jianping Wang,¹⁹ Rian Van Rampelbergh,²⁰ Clarissa M. Uhlar,¹⁸ Rachel Kobos,¹⁹ Ming Qi,¹⁸ Saad Z. Usmani²¹

¹Service des Maladies du Sang, Hôpital Claude Huriez, Lille, France; ²Department of Hematology, Mayo Clinic Rochester, Rochester, MN, USA; ³Vejle Hospital and University of Southern Denmark, Vejle, Denmark; ⁴Department of Lymphoma-Myeloma, University of Texas M.D. Anderson Cancer Center, Houston, TX, USA; ⁵Hematology, University Hospital Hôtel-Dieu, Nantes, France; ⁶University of Calgary, Arnie Charbonneau Cancer Institute, Calgary, AB, Canada; ⁷Royal Wolverhampton Hospitals NHS Trust, Wolverhampton, United Kingdom; ⁸Karolinska Institute, Department of Medicine, Division of Hematology, Karolinska University Hospital at Huddinge, Stockholm, Sweden; ⁹Department of Hematology, Hospital Haut Leveque, University Hospital, Pessac, France; ¹⁰St. Vincent's Hospital, University of Melbourne, Melbourne, Australia; ¹¹University Hospital Heidelberg and National Center of Tumor Diseases (NCT), Heidelberg, Germany; ¹²Dept. of Medicine/Haematology, NUI, Galway, Republic of Ireland; ¹³Hematology Department, University Hospital, Vandoeuvre Les Nancy, France; ¹⁴Division of Medical Oncology University of Alberta, Edmonton, AB, Canada; ¹⁵Universitaetsklinikum Tuebingen der Eberhard-Karls-Universitaet, Abteilung fuer Innere Medizin II, Tuebingen, Germany; ¹⁶Florida Cancer Specialists & Research Institute, St. Petersburg, FL, USA; ¹⁷Genmab US, Inc., Princeton, NJ, USA; ¹⁸Janssen Research & Development, Spring House, PA, USA; ¹⁹Janssen Research & Development, Raritan, NJ, USA; ²⁰Janssen Research & Development, Beerse, Belgium; ²¹Levine Cancer Institute/Atrium Health, Charlotte, NC, USA.
*ClinicalTrials.gov Identifier: NCT02252172

MAIA Overview: Primary Endpoint



- Median follow-up: 28 months
- PFS hazard ratio: 0.56 (95% CI, 0.43 to 0.73; $P < 0.0001$)
- 44% reduction in the risk of progression or death in patients treated with D-Rd
- The median PFS for the Rd arm was 31.9 months and not reached for the D-Rd arm

Facon T, et al. ASH 2018.

^aKaplan-Meier estimate.

MAIA Overview: Secondary Endpoints

	D-Rd	Rd
CR or better	47.6% <i>P</i> <0.0001	24.9%
VGPR or better	79.3% <i>P</i> <0.0001	53.1%

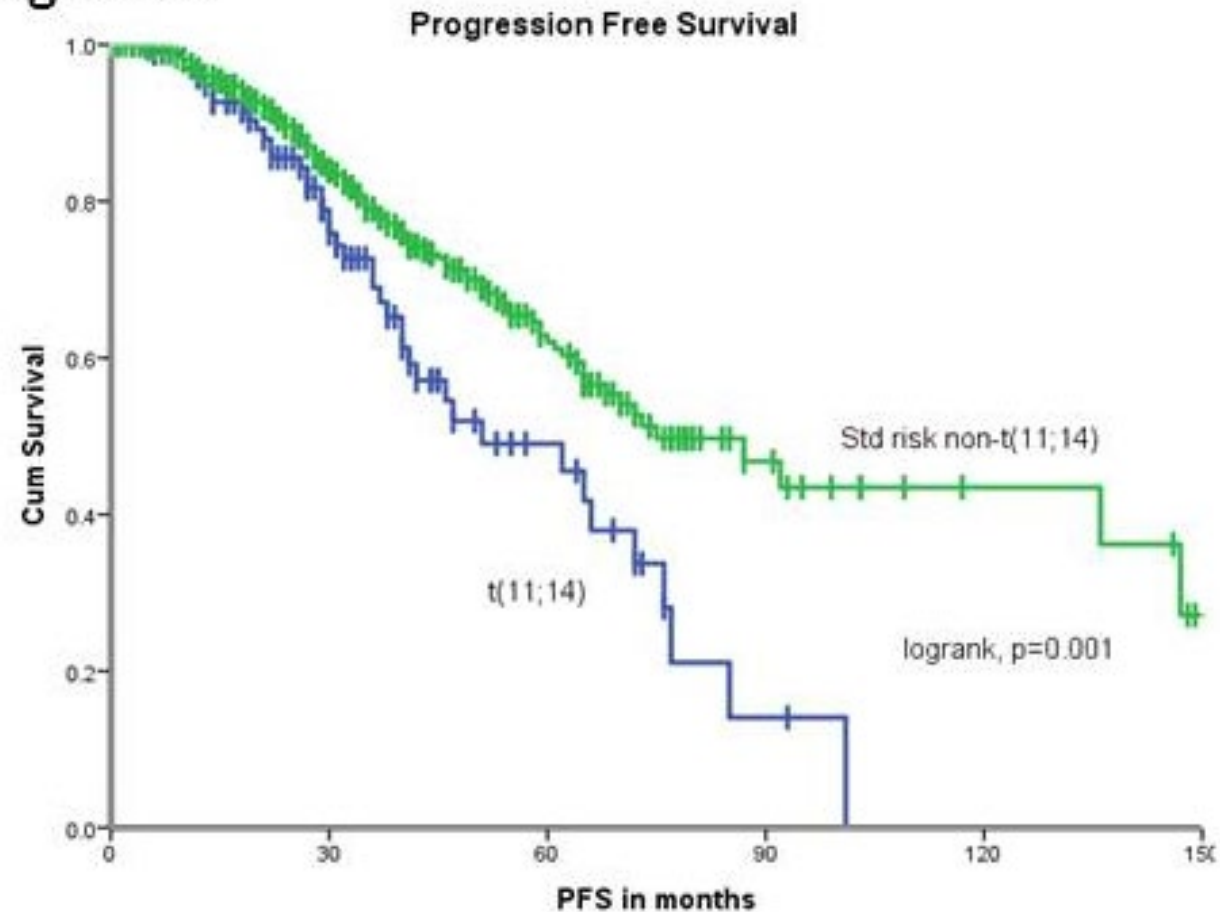
- A total of 19% of patients have died and the HR for OS was 0.78 (95% CI, 0.56 to 1.1)
- Higher rates (5% or more difference) of grade 3/4 pneumonia, neutropenia, and leukopenia were observed in the D-Rd arm
- The safety profile is consistent with previously reported DARA studies

- The addition of DARA to Rd in patients with transplant-ineligible NDMM significantly reduced the risk of progression or death by 44%
- There are no new safety signals using DARA plus Rd in NDMM
- These data together with the phase 3 ALCYONE study (D-VMP vs VMP) support the addition of DARA to standard-of-care combinations in patients with NDMM ineligible for transplant

Impact of t(11;14) in Frontline Setting

Abstract #3282: Outcomes in 1,000 patients receiving frontline bortezomib/lenalidomide/dexamethasone (VRd)

Figure 2.



What Do You Foresee for Frontline Therapy?

- **Daratumumab added to VRd, KRd or VMP?
(or alternatives VTd/VCd)**
- **Use of Dara-Rd or Dara-Vd versus VRd?**
- **Introduction of Venetoclax early for t(11;14)?**
- **Early introduction of CAR T cells or BiTEs?**
- **Other?**

New Information on Maintenance

- **Ixazomib maintenance**
- **R versus Rd for maintenance**

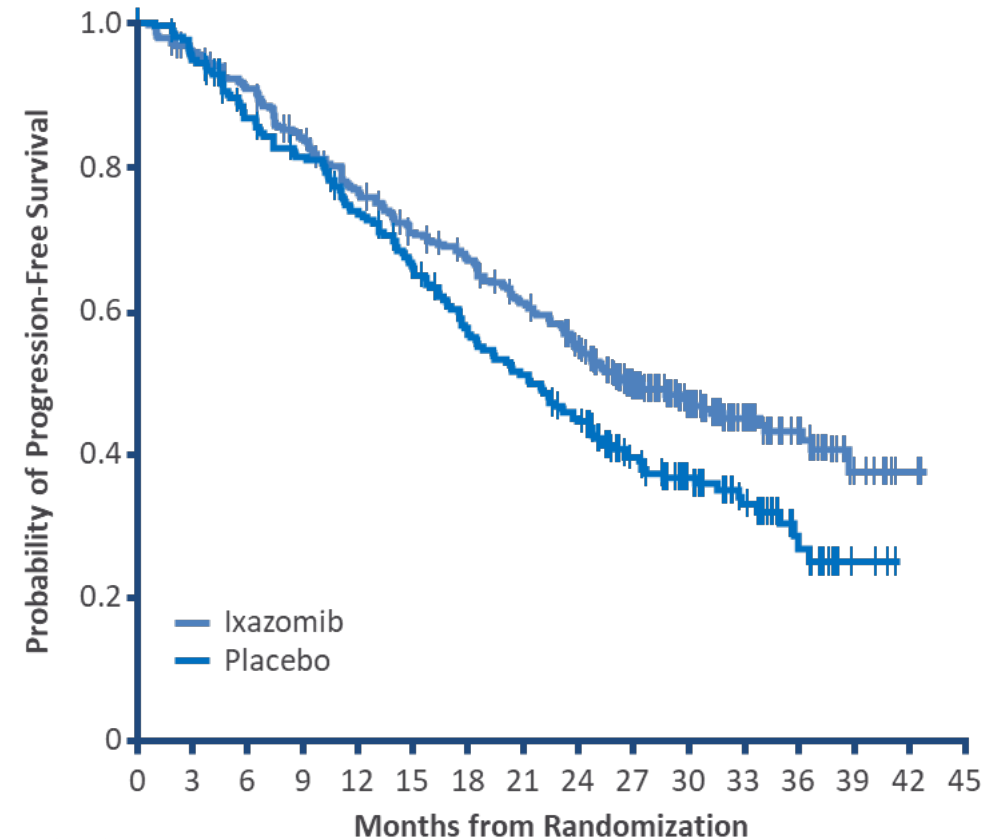
Abstract #301:TOURMALINE-MM3 Study

Maintenance Therapy With the Oral Proteasome Inhibitor (PI) Ixazomib Significantly Prolongs Progression-Free Survival (PFS) Following Autologous Stem Cell Transplantation (ASCT) in Patients With Newly Diagnosed Multiple Myeloma (NDMM): Phase 3 TOURMALINE-MM3 Trial

Meletios A. Dimopoulos,¹ Francesca Gay,² Fredrik Schjesvold,³ Meral Beksac,⁴ Roman Hajek,⁵ Katja C. Weisel,⁶ Hartmut Goldschmidt,⁷ Vladimir Maisnar,⁸ Philippe Moreau,⁹ Chang Ki Min,¹⁰ Agnieszka Pluta,¹¹ Wee-Joo Chng,^{12,13} Martin Kaiser,^{14,15} Sonja Zweegman,¹⁶ Maria-Victoria Mateos,¹⁷ Andrew Spencer,¹⁸ Shinsuke Iida,¹⁹ Gareth Morgan,²⁰ Zhaoyang Teng,²¹ Kaveri Suryanarayan,²¹ Tomas Skacel,²¹ Antonio Palumbo,^{21,22} Ajeeta B. Dash,²¹ Richard Labotka,²¹ S. Vincent Rajkumar,²³ on behalf of the TOURMALINE-MM3 study group

39% improvement in overall PFS with ixazomib vs. placebo

- There was a significant 39% improvement in overall PFS from time of randomization for patients receiving ixazomib vs. placebo maintenance:
 - HR: 0.72; 95% CI: 0.582–0.890
 - $p=0.002$
 - Median 26.5 months vs. 21.3 months
- With only 14% of deaths reported, at a median follow-up of 31 months, median OS has not been reached in either treatment arm and follow up continues



No. of patients at risk:											
Ixazomib	395	363	340	311	279	255	238	213	187	135	93
56	35	9	3	0							
Placebo	261	238	210	195	174	153	130	117	100	69	46
32	15	3	0	0							

Abstract #305: Rd-R Vs. Continuous Rd Study

Efficacy and Feasibility of Dose/Schedule-Adjusted Rd-R Vs. Continuous Rd in Elderly and Intermediate-Fit Newly Diagnosed Multiple Myeloma (NDMM) Patients: RV-MM-PI-0752 Phase III Randomized Study

Benevolo,1 Monica Galli,1 Vittorio Montefusco,1 Tommaso Caravita di Toritto,1 Anna Baraldi,1 Stefano Spada,1 Nicola Giuliani,1 Chiara Pautasso,1 Stefano Pulini,1 Sonia Ronconi,1 Norbert Pescosta,1 Anna Marina Liberati,1 Francesca Patriarca,1 Claudia Cellini,1 Patrizia Tosi,1 Massimo Offidani,1 Michele Cavo,1 Antonio Palumbo,2 Mario Boccadoro,1 Sara Bringhen.1

1 GIMEMA / European Myeloma Network, Italy; 2 University of Torino - Currently Takeda Pharmaceuticals Co.

Rationale

Clinical trials usually have stringent eligibility criteria and ***myeloma patients 75 years or older are an understudied population***

Older patients are susceptible to AEs that may negatively affect duration of treatment and outcome due to increased comorbidities and altered pharmacodynamics.



We designed a trial for elderly INTERMEDIATE-FIT patients (IMWG Frailty SCORE=1) and compared standard continuous Rd vs Rd induction followed by R maintenance.

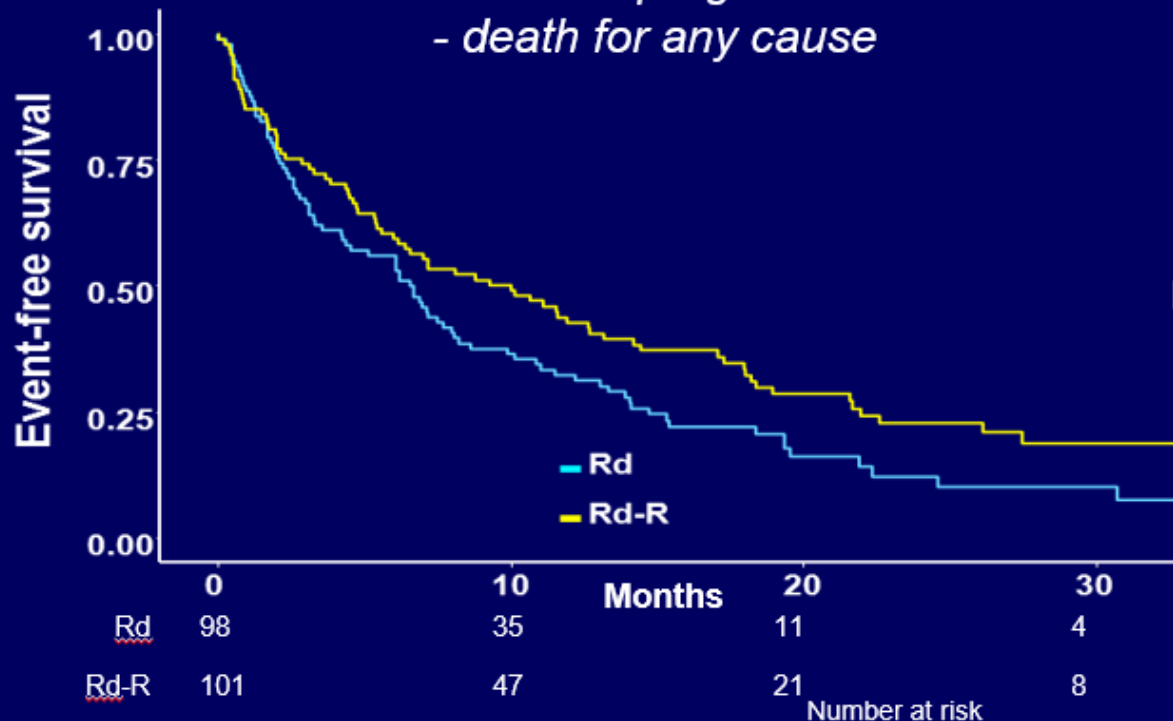
Rd-R vs Rd: Event-free Survival

Median follow-up 25 months

Primary endpoint: Event-free Survival (EFS)

Definition of the event*:- hematologic grade 4 AEs

- non-hematologic grade 3-4 AEs including SPM
- discontinuation of lenalidomide therapy
- disease progression
- death for any cause



	N	Median EFS
Rd-R	101	9.3 months
Rd	98	6.6 months

Rd-R vs Rd: HR 0.72; CI 0.52-0.99; p=0.044

Abstract #355

R, Lenalidomide; d, dexamethasone; EFS, event-free survival; AEs, adverse events; SPM, second primary malignancy

*related to study drugs

Role of Maintenance

How do you select maintenance in 2018?

Understand a New Biology of Myeloma

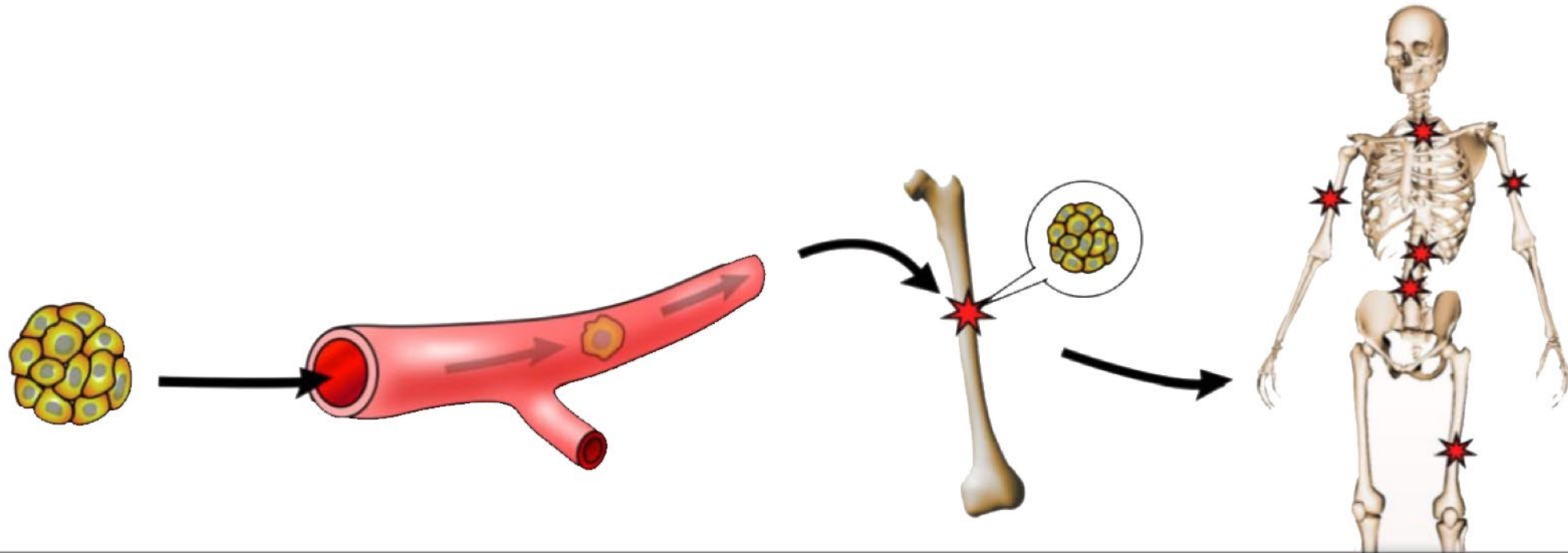
The role of circulating myeloma cells

Abstract #245: Circulating Myeloma Cells

Transcriptomic Profiling of Circulating Tumor Cells (CTCs) in Multiple Myeloma (MM): A New Model to Understand Disease Dissemination

Juan-Jose Garces, Michal Simicek, Marco Vicari, Lucie Brozova, Leire Burgos, Renata Bezdekova, Diego Alignani, Maria-Jose Calasanz, Katerina Growkova, Ludek Pour, Rafel Rios, Joaquin Martinez-Lopez, Pamela Millacoy, Luis Palomera, Rafael del Orbe, Sonia Garate, Laura Blanco, Patricia Maiso, Zuzana Chyra, Alexander Vdovin, Tomas Jelinek, Cirino Botta, Halima El Omri, Jonathan Keats, Xabier Agirre, Felipe Prosper, Roman Hajek, Jesus San Miguel, Bruno Paiva

CTCs could be key drivers of myeloma progression



Primary tumor;
Local invasion;
Plasmacytoma

Circulation

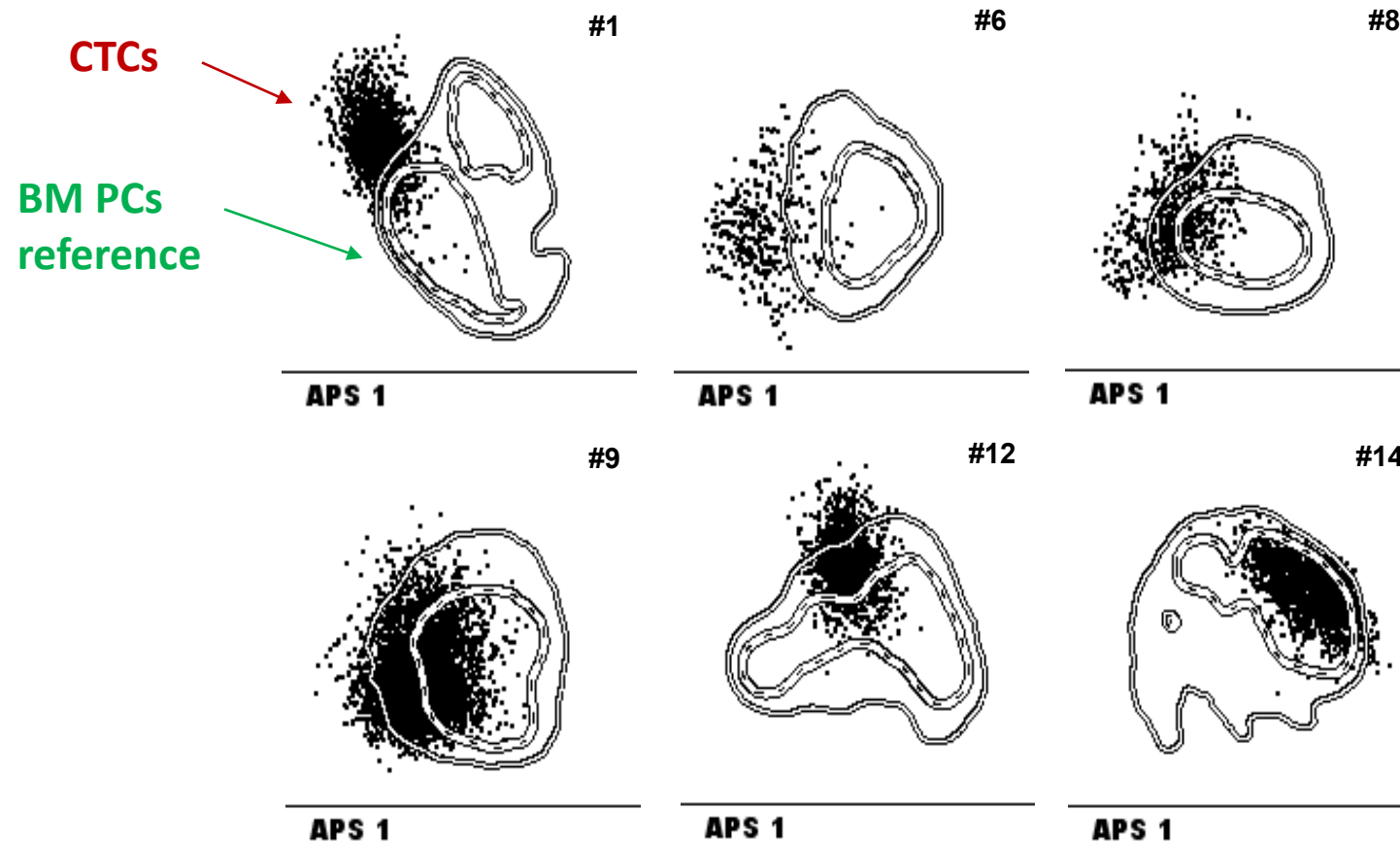
Micrometastasis;
MGUS

Colonization;
Multiple lytic lesion-
symptomatic disease

Abstract #245

The continuous circulation of clonal PCs leads to micrometastatic MGUS followed by more disseminated disease

Myeloma dissemination is based in very low numbers of circulating tumor cells



Abstract #245

Disease dissemination may depend on few tumor cells with unique features allowing them to egress from BM (*such as lower expression of integrin and adhesion molecules*)

Conclusions

- Gene expression of CTCs is almost identical to that of patient-matched bone marrow clonal plasma cells...

... except for a few genes that are involved in interferon and inflammatory response, hypoxia, cell cycle and migration (CD44)

- Some of these genes are related to more aggressive disease and modulating their expression may impact migration and adhesion of clonal PCs
- Studying the transcriptome of CTCs may unveil novel prognostic markers related to disease dissemination and therapeutic targets to overcome it

Options for Blood Monitoring

- **Clonal plasma cells** using NGF with molecular/immune testing of cells
- **M-component** using Mass Spec
- **DNA/RNA** using ctDNA/RNA



VNiVERSiDAD
D SALAMANCA

MAYO
CLINIC



**Binding
Site**



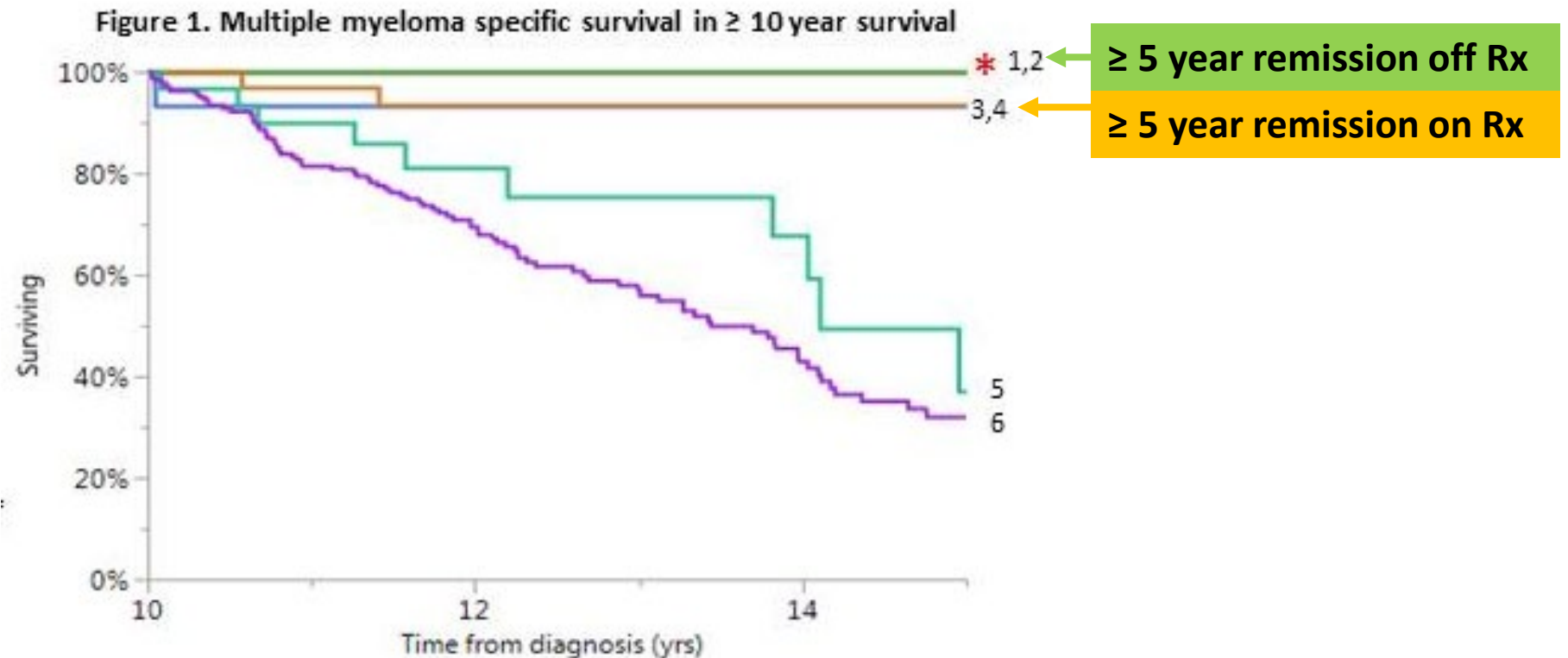
MONASH University
Medicine, Nursing and Health Sciences

Question

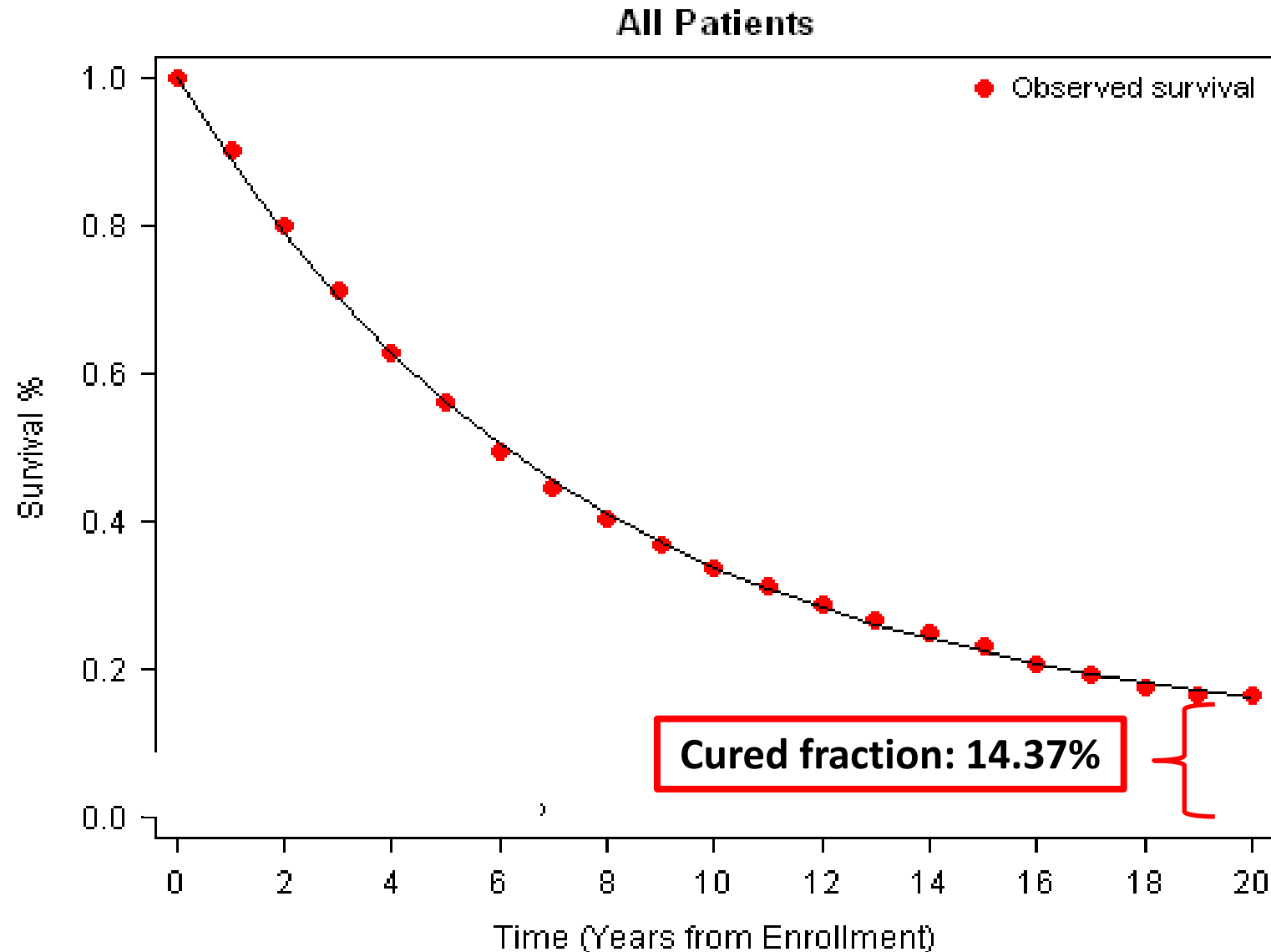
Will blood monitoring become a reliable and practical method?

Understanding Long-term Survival 2018

- Abstract #1912: Mayo Clinic follow up of 2,125 patients at ≥ 10 years
- Abstract #4508: detailed analysis of 24 patients with 7-17 years remission
- Abstract #4503: remission at ≥ 5 years correlated with MGUS-like signature; normal hemoglobin and MRD undetected



“Cure Fraction” from IMWG Analyses*



* Blood Cancer in press 2018

Key highlights: Characteristics of long survivors

Factor	PFS		OS	
	HR (95% CI)	p-value	HR (95% CI)	p-value
Age	1.15 (1.04;1.28)	0.01	1.35 (1.17;1.56)	<0.001
Year of ASCT (1 year increase)	1.01 (0.99;1.03)	0.24	1.02 (0.99;1.05)	0.21
MM type (reference: IgG)				
IgA	1.06 (0.84;1.34)	0.61	1.02 (0.77;1.36)	0.89
IgD	0.70 (0.28;1.72)	0.44	0.93 (0.34;2.55)	0.89
Bence-Jones	1.05 (0.83;1.33)	0.67	1.00 (0.74;1.35)	0.99
ISS stage (reference: 1)				
2	1.05 (0.84;1.30)	0.69	1.04 (0.79;1.35)	0.80
3	1.30 (0.98;1.73)	0.07	1.34 (0.94;1.91)	0.10
Laboratory values at diagnosis				
Hemoglobin < 10g/dL	1.09 (0.87;1.37)	0.48	0.92 (0.69;1.24)	0.60
Thrombocytes < 150.000/μL	1.48 (1.07;2.04)	0.02	1.67 (1.10;2.52)	0.02
Creatinine \geq 2mg/dL	0.99 (0.72;1.38)	0.97	1.32 (0.89;1.96)	0.17
LDH > upper limit of normal	1.11 (0.87;1.43)	0.40	1.28 (0.94;1.74)	0.11
CR after ASCT (ref. non-CR)	0.69 (0.52;0.93)	0.01	0.82 (0.57;1.17)	0.27
Novel agent based induction	0.58 (0.45;0.74)	<0.001	0.48 (0.35;0.67)	<0.001
Tandem ASCT (ref. single)	0.93 (0.75;1.14)	0.46	0.80 (0.61;1.04)	0.10
Maintenance therapy (time dep.)	0.53 (0.42;0.65)	<0.001	0.48 (0.37;0.63)	<0.001

Question

Are we starting to cure (or “functionally” cure) good-risk myeloma– especially if we start early (with HR SMM)?

How important is achievement of MRD undetected (negative) in relapse setting?

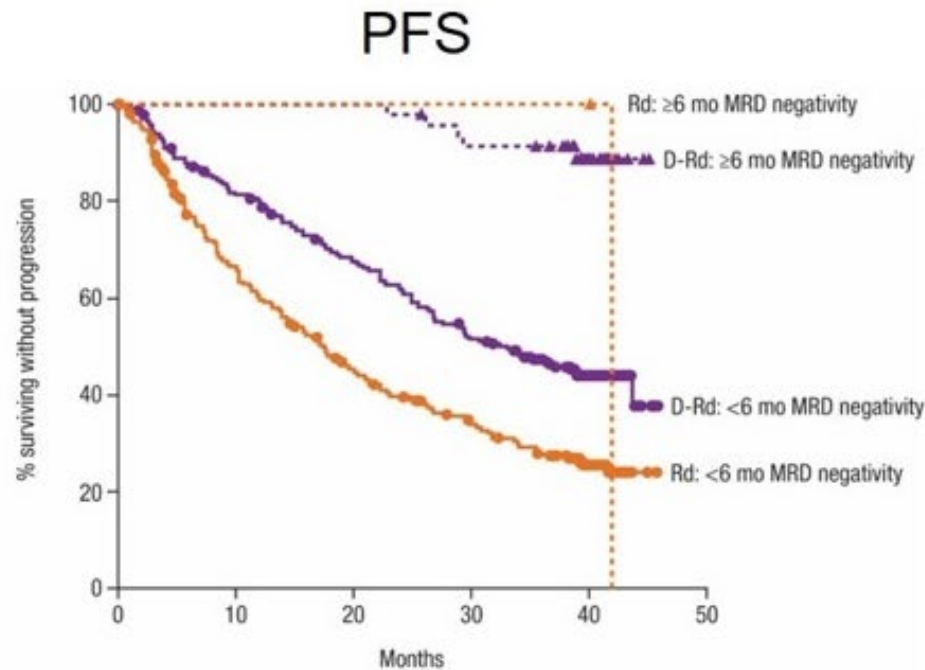
CASTOR and POLLUX follow up

Importance of MRD Undetected in Relapse

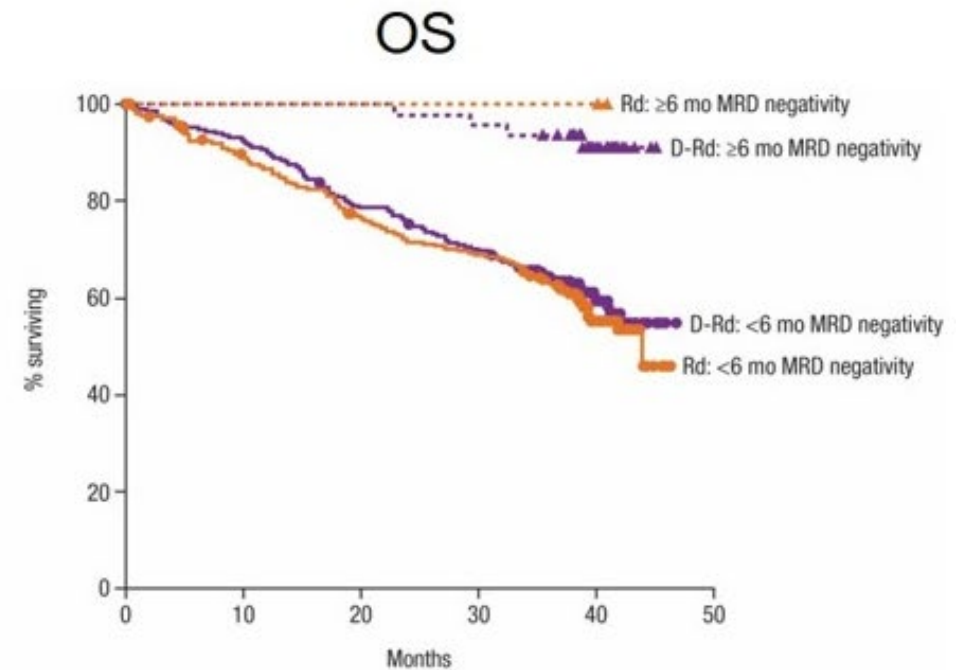
Abstract #3272: MRD in POLLUX and CASTOR trials

DRd vs Rd: MRD negative sustained at 6 months

POLLUX



No. at risk	2	10	18	26	34	42
Rd ≥6 mo MRD negativity	2	2	2	2	2	0
D-Rd ≥6 mo MRD negativity	47	47	47	42	19	0
Rd <6 mo MRD negativity	281	175	114	80	26	0
D-Rd <6 mo MRD negativity	239	186	151	114	46	0



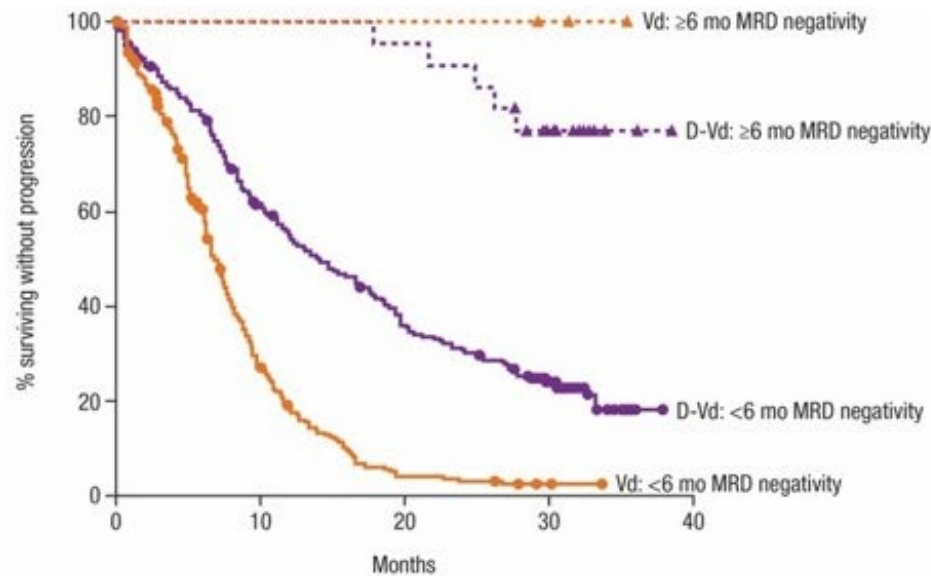
No. at risk	2	10	18	26	34	42
Rd ≥6 mo MRD negativity	2	2	2	2	2	0
D-Rd ≥6 mo MRD negativity	47	47	45	20	0	0
Rd <6 mo MRD negativity	281	243	208	187	63	0
D-Rd <6 mo MRD negativity	239	218	184	162	64	0

Importance of MRD Undetected in Relapse

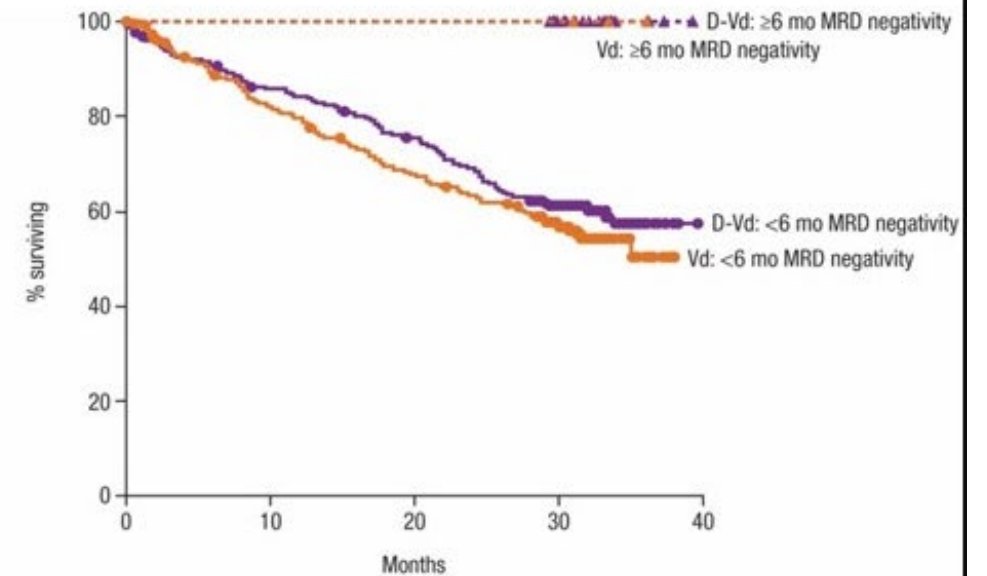
Abstract #3272: MRD in POLLUX and CASTOR trials

DVd vs Rd: MRD negative sustained at 12 months

CASTOR



	No. at risk	0	10	20	30	40
Vd ≥6 mo MRD negativity	3	3	3	2	0	
D-Vd ≥6 mo MRD negativity	22	22	21	12	0	
Vd <6 mo MRD negativity	244	54	8	2	0	
D-Vd <6 mo MRD negativity	229	130	75	39	0	



	No. at risk	0	10	20	30	40
Vd ≥6 mo MRD negativity	3	3	3	3	0	
D-Vd ≥6 mo MRD negativity	22	22	22	16	0	
Vd <6 mo MRD negativity	244	186	152	96	0	
D-Vd <6 mo MRD negativity	229	188	164	99	0	

Question

Should achievement of MRD negative (undetected) status be the goal of therapy in early relapse setting?

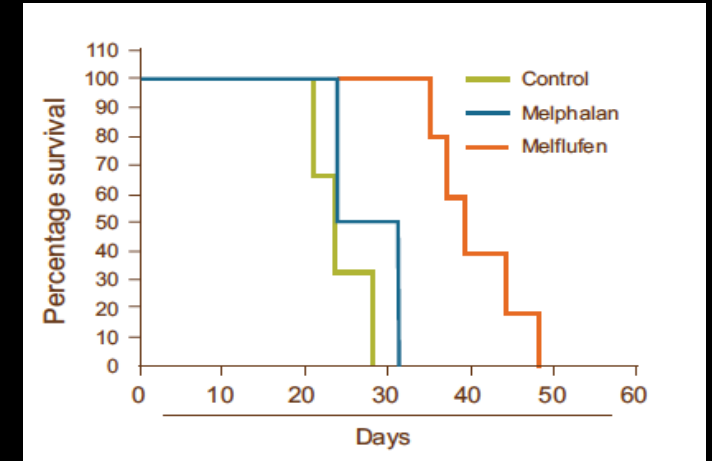
What “Hot Topics” Have We Missed?

- **Venetoclax**
- **Selinexor**
- **Melflufen**

+Elo/Pom

Melflufen

- Melflufen is a highly lipophilic alkylating peptide, belonging to the **novel class of Peptidase Enhanced Compounds**
- **Intracellular amino-peptidases** that are overexpressed in most malignant cells, will rapidly **cleave melflufen releasing the hydrophilic, active** alkylating metabolite
- In vitro, treatment of tumor cells with melflufen results in 50-fold higher intracellular concentration of alkylating metabolite than those treated with equimolar melphalan alone. In vivo, human xenograft mouse models treated with equimolar melflufen showed prolonged survival



Chauhan Clin Cancer Res 2013 & Wickström Invest New Drugs 2008

Melflufen 40 mg iv every 28 days + Dex 40 mg weekly

Phase II O-12-M1 trial

RRMM pts ≥ 2 lines and refr. to last line.

n=45 4 (2-14) lines; 64% double refr.; 53% Alkylator refr.

ORR 31% 5 VGPR & 9 PR patients

PFS: 5.7m ; DOR 8.4m; OS: 20.7m

G3/4 AEs: Thromboc. (58%), Neutrop. (51%), Anemia: 42%

Blood 2017, 130: 3150

Phase II Horizon trial

RRMM pts ≥ 2 lines and 86% double Ref

n=83 5 (2-13) lines; Alkylator refr. 55%; Pom & Dara Refr: 60%

ORR 33% 1 sCR, 9 VGPR & 17 PR patients

PFS: 4.0m

G3/4 rel. TEAEs: Thromboc. (59%), Neutropenia (61%), Anemia: 25%

Richardson P. ASH 2018 (Abst 600)

What “Hot Topics” Have We Missed?

- **Maria-Victoria Mateos**
- **Joseph Mikhael**
- **Brian GM Durie**

Thank you for watching!

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